

Remarks:

This amendment is submitted in an earnest effort to advance this case to issue without delay.

It is known to make spun bond by depositing filaments on a mesh belt and consolidating them so as to tangle together the filaments by hydrodynamic needling. This needling process is less effective with very long or endless filaments than with shorter filaments, so that a spun bond made of endless filaments must be given a particularly long and energetic needling to produce a product having usable properties with respect to strength and resistance to wear. Such extra treatment is, however, fairly costly both because it slows down the overall manufacturing time, and the needling process itself uses considerable energy.

The instant invention is based on the discovery that if the spun-bond is subjected to a mechanical precompaction by calendering, it can be turned into a strong and wear-resistant product without having to undergo the above-described extra-long needling operation. Such a calendering can be done at quite high speed so that it does not slow down production at all, but the subsequent hydraulic needling process is then effective, even on a spun bond made of endless filaments. Such a process is not suggested by or shown in the art.

More particularly, US 3,485,706 of Evans shows a process with no calendering and no wetting agent. Thus this reference is not relevant to the invention as now claimed.

US 6,903,034 of Putnam does disclose the use of a wetting agent, but nowhere suggests the calendering step. Thus the instant invention is novel over both of these references, even in combination under §103, since neither shows or suggests a critical inventive step, namely the calendering.

Neither reference suggests the mechanical precompaction by calendering. In fact Putnam goes a step further and even proposes overcoming the inadequate results of the known process by passing the spun bond several times through the hydrodynamic entangling step. This reference therefore teaches away from the instant invention.

For the reasons advance above, therefore, the instant invention is clearly allowable over the art. Allowance of all claims is in order.

If only minor problems that could be corrected by means of a telephone conference stand in the way of allowance of this

case, the examiner is invited to call the undersigned to make the necessary corrections.

Respectfully submitted,
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Enclosure: Request for extension (two months)